

May 02, 2016

Meagan E. Ormand  
Golder Associates Inc.  
2108 W. Laburnum Ave.  
Suite 200  
Richmond, VA 23227

RE: Project: BREMO  
Pace Project No.: 92295753

Dear Meagan Ormand:

Enclosed are the analytical results for sample(s) received by the laboratory on April 29, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Nicole Gasiorowski  
nicole.gasiorowski@pacelabs.com  
Project Manager

Enclosures

cc: Ron DiFrancesco, Golder Associates Inc.  
Mike Williams, Golder Associates Inc



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## CERTIFICATIONS

Project: BREMO  
Pace Project No.: 92295753

---

### Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174  
Alabama Certification #: 41320  
Connecticut Certification #: PH-0216  
Delaware Certification: FL NELAC Reciprocity  
Florida Certification #: E83079  
Georgia Certification #: 955  
Guam Certification: FL NELAC Reciprocity  
Hawaii Certification: FL NELAC Reciprocity  
Illinois Certification #: 200068  
Indiana Certification: FL NELAC Reciprocity  
Kansas Certification #: E-10383  
Louisiana Certification #: FL NELAC Reciprocity  
Louisiana Environmental Certificate #: 05007  
Maryland Certification: #346  
Michigan Certification #: 9911  
Mississippi Certification: FL NELAC Reciprocity  
Missouri Certification #: 236  
Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14  
Nevada Certification: FL NELAC Reciprocity  
New York Certification #: 11608  
North Carolina Environmental Certificate #: 667  
North Carolina Certification #: 12710  
North Dakota Certification #: R-216  
Oklahoma Certification #: D9947  
Pennsylvania Certification #: 68-00547  
Puerto Rico Certification #: FL01264  
South Carolina Certification: #96042001  
Tennessee Certification #: TN02974  
Texas Certification: FL NELAC Reciprocity  
US Virgin Islands Certification: FL NELAC Reciprocity  
Virginia Environmental Certification #: 460165  
Wyoming Certification: FL NELAC Reciprocity  
West Virginia Certification #: 9962C  
Wisconsin Certification #: 399079670  
Wyoming (EPA Region 8): FL NELAC Reciprocity

---

### Charlotte Certification IDs

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078  
North Carolina Drinking Water Certification #: 37706  
North Carolina Field Services Certification #: 5342  
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001  
Florida/NELAP Certification #: E87627  
Kentucky UST Certification #: 84  
Virginia/VELAP Certification #: 460221

---

### Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804  
Florida/NELAP Certification #: E87648  
Massachusetts Certification #: M-NC030  
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40  
South Carolina Certification #: 99030001  
Virginia/VELAP Certification #: 460222

---

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## SAMPLE ANALYTE COUNT

Project: BREMO  
Pace Project No.: 92295753

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92295753001	T1-160429-1023-S3	EPA 1664B	JMS	1	PASI-C
		EPA 200.7	CKJ	1	PASI-O
		Trivalent Chromium Calculation	HEA	1	PASI-O
		EPA 200.8	DRS	10	PASI-O
		EPA 245.1	SH1	1	PASI-A
		SM 2540D	MJP	1	PASI-A
		EPA 218.6	AEM	1	PASI-O
		EPA 350.1	AES2	1	PASI-A
		SM 4500-CI-E	AES2	1	PASI-A

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## PROJECT NARRATIVE

Project: BREMO  
Pace Project No.: 92295753

---

**Method:** EPA 1664B  
**Description:** HEM, Oil and Grease  
**Client:** Golder\_Dominion\_Bremo  
**Date:** May 02, 2016

**General Information:**

1 sample was analyzed for EPA 1664B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## PROJECT NARRATIVE

Project: BREMO  
Pace Project No.: 92295753

---

**Method:** EPA 200.7  
**Description:** 200.7 MET ICP  
**Client:** Golder\_Dominion\_Bremo  
**Date:** May 02, 2016

**General Information:**

1 sample was analyzed for EPA 200.7. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## PROJECT NARRATIVE

Project: BREMO  
Pace Project No.: 92295753

---

**Method:** Trivalent Chromium Calculation  
**Description:** Trivalent Chromium Calculation  
**Client:** Golder\_Dominion\_Bremo  
**Date:** May 02, 2016

**General Information:**

1 sample was analyzed for Trivalent Chromium Calculation. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## PROJECT NARRATIVE

Project: BREMO  
Pace Project No.: 92295753

---

**Method:** EPA 200.8  
**Description:** 200.8 MET ICPMS  
**Client:** Golder\_Dominion\_Bremo  
**Date:** May 02, 2016

**General Information:**

1 sample was analyzed for EPA 200.8. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## PROJECT NARRATIVE

Project: BREMO  
Pace Project No.: 92295753

---

**Method:** EPA 245.1  
**Description:** 245.1 Mercury  
**Client:** Golder\_Dominion\_Bremo  
**Date:** May 02, 2016

**General Information:**

1 sample was analyzed for EPA 245.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 245.1 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..



## PROJECT NARRATIVE

Project: BREMO  
Pace Project No.: 92295753

---

**Method:** SM 2540D  
**Description:** 2540D TSS, Low-Level  
**Client:** Golder\_Dominion\_Bremo  
**Date:** May 02, 2016

**General Information:**

1 sample was analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## PROJECT NARRATIVE

Project: BREMO  
Pace Project No.: 92295753

---

**Method:** EPA 218.6  
**Description:** Hexavalent Chromium 28 Day  
**Client:** Golder\_Dominion\_Bremo  
**Date:** May 02, 2016

### General Information:

1 sample was analyzed for EPA 218.6. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

QC Batch: WETA/57418

CC: The continuing calibration for this compound is outside of method control limits. The result is estimated.

- BLANK (Lab ID: 1559444)
  - Chromium, Hexavalent
- LCS (Lab ID: 1559446)
  - Chromium, Hexavalent
- MS (Lab ID: 1559447)
  - Chromium, Hexavalent
- MSD (Lab ID: 1559448)
  - Chromium, Hexavalent
- T1-160429-1023-S3 (Lab ID: 92295753001)
  - Chromium, Hexavalent

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: WETA/57418

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 1559446)
  - Chromium, Hexavalent

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/57418

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92295752001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 1559447)
  - Chromium, Hexavalent

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## PROJECT NARRATIVE

Project: BREMO  
Pace Project No.: 92295753

---

**Method:** EPA 218.6  
**Description:** Hexavalent Chromium 28 Day  
**Client:** Golder\_Dominion\_Bremo  
**Date:** May 02, 2016

QC Batch: WETA/57418

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92295752001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MSD (Lab ID: 1559448)
- Chromium, Hexavalent

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## PROJECT NARRATIVE

Project: BREMO  
Pace Project No.: 92295753

---

**Method:** EPA 350.1  
**Description:** 350.1 Ammonia  
**Client:** Golder\_Dominion\_Bremo  
**Date:** May 02, 2016

**General Information:**

1 sample was analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## PROJECT NARRATIVE

Project: BREMO  
Pace Project No.: 92295753

---

**Method:** SM 4500-CI-E  
**Description:** 4500 Chloride  
**Client:** Golder\_Dominion\_Bremo  
**Date:** May 02, 2016

**General Information:**

1 sample was analyzed for SM 4500-CI-E. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## ANALYTICAL RESULTS

Project: BREMO  
Pace Project No.: 92295753

Sample: T1-160429-1023-S3		Lab ID: 92295753001		Collected: 04/29/16 10:23		Received: 04/29/16 13:52		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
Field Data		Analytical Method:							
Collected By	M. Ormand			1		04/29/16 10:36			
Collected Date	4/29/16			1		04/29/16 10:36			
Collected Time	10:23			1		04/29/16 10:36			
Field pH	7.7	Std. Units	0.10	1		04/29/16 10:36			
Field Temperature	19.4	deg C	0.50	1		04/29/16 10:36			
HEM, Oil and Grease		Analytical Method: EPA 1664B							
Oil and Grease	ND	mg/L	5.0	1		05/02/16 07:17			
200.7 MET ICP		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Tot Hardness asCaCO3 (SM 2340B	99600	ug/L	3300	1	05/02/16 08:05	05/02/16 13:45			
Trivalent Chromium Calculation		Analytical Method: Trivalent Chromium Calculation							
Chromium, Trivalent	ND	ug/L	5.0	1		05/02/16 17:24	16065-83-1		
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Antimony	ND	ug/L	5.0	1	05/02/16 08:05	05/02/16 15:48	7440-36-0		
Arsenic	ND	ug/L	5.0	1	05/02/16 08:05	05/02/16 15:48	7440-38-2		
Cadmium	ND	ug/L	1.0	1	05/02/16 08:05	05/02/16 15:48	7440-43-9		
Copper	ND	ug/L	5.0	1	05/02/16 08:05	05/02/16 15:48	7440-50-8		
Lead	ND	ug/L	5.0	1	05/02/16 08:05	05/02/16 15:48	7439-92-1		
Nickel	ND	ug/L	5.0	1	05/02/16 08:05	05/02/16 17:41	7440-02-0		
Selenium	ND	ug/L	5.0	1	05/02/16 08:05	05/02/16 15:48	7782-49-2		
Silver	ND	ug/L	0.40	1	05/02/16 08:05	05/02/16 15:48	7440-22-4		
Thallium	ND	ug/L	1.0	1	05/02/16 08:05	05/02/16 15:48	7440-28-0		
Zinc	ND	ug/L	25.0	1	05/02/16 08:05	05/02/16 15:48	7440-66-6		
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1							
Mercury	ND	ug/L	0.10	1	04/30/16 12:05	04/30/16 14:46	7439-97-6		
2540D TSS, Low-Level		Analytical Method: SM 2540D							
Total Suspended Solids	1.5	mg/L	1.0	1		04/30/16 11:22			
Hexavalent Chromium 28 Day		Analytical Method: EPA 218.6							
Chromium, Hexavalent	ND	ug/L	1.0	1		05/02/16 17:47	18540-29-9	CC,L3	
350.1 Ammonia		Analytical Method: EPA 350.1							
Nitrogen, Ammonia	ND	mg/L	0.20	1		04/30/16 15:15	7664-41-7		
4500 Chloride		Analytical Method: SM 4500-Cl-E							
Chloride	45.7	mg/L	10.0	2		04/30/16 13:41	16887-00-6		

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: BREMO  
Pace Project No.: 92295753

QC Batch:	GCSV/24851	Analysis Method:	EPA 1664B
QC Batch Method:	EPA 1664B	Analysis Description:	1664 HEM, Oil and Grease
Associated Lab Samples:	92295753001		

METHOD BLANK: 1723499 Matrix: Water  
Associated Lab Samples: 92295753001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	05/02/16 07:09	

LABORATORY CONTROL SAMPLE & LCSD: 1723500		1723501								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Oil and Grease	mg/L	40	38.2	39.9	96	100	78-114	4	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: BREMO  
Pace Project No.: 92295753

QC Batch:	MERP/9340	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury
Associated Lab Samples:	92295753001		

METHOD BLANK: 1723431 Matrix: Water  
Associated Lab Samples: 92295753001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	04/30/16 14:34	

LABORATORY CONTROL SAMPLE: 1723432

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1723433 1723434

Parameter	92295752001		MS	MSD	MS	MSD	MS	MSD	% Rec	RPD	Qual
	Units	Result	Spike Conc.	Spike Conc.							
Mercury	ug/L	ND	2.5	2.5	2.5	2.4	98	98	70-130	1	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..



## QUALITY CONTROL DATA

Project: BREMO  
Pace Project No.: 92295753

QC Batch:	MPRP/30163	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 MET
Associated Lab Samples:	92295753001		

METHOD BLANK: 1559222 Matrix: Water  
Associated Lab Samples: 92295753001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	ug/L	ND	3300	05/02/16 13:21	

LABORATORY CONTROL SAMPLE: 1559223

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	ug/L	82700	84200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1559224 1559225

Parameter	Units	92295750001		MS		MSD		MS		MSD		% Rec Limits	RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Tot Hardness asCaCO3 (SM 2340B	ug/L	102000	82700	82700	182000	182000	98	98	70-130	0				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: BREMO  
Pace Project No.: 92295753

QC Batch:	MPRP/30164	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
Associated Lab Samples:	92295753001		

METHOD BLANK: 1559226 Matrix: Water  
Associated Lab Samples: 92295753001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	05/02/16 15:36	
Arsenic	ug/L	ND	5.0	05/02/16 15:36	
Cadmium	ug/L	ND	1.0	05/02/16 15:36	
Copper	ug/L	ND	5.0	05/02/16 15:36	
Lead	ug/L	ND	5.0	05/02/16 15:36	
Nickel	ug/L	ND	5.0	05/02/16 17:32	
Selenium	ug/L	ND	5.0	05/02/16 15:36	
Silver	ug/L	ND	0.40	05/02/16 15:36	
Thallium	ug/L	ND	1.0	05/02/16 15:36	
Zinc	ug/L	ND	25.0	05/02/16 15:36	

LABORATORY CONTROL SAMPLE: 1559227

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	50	48.8	98	85-115	
Arsenic	ug/L	50	50.8	102	85-115	
Cadmium	ug/L	5	4.8	97	85-115	
Copper	ug/L	50	50.9	102	85-115	
Lead	ug/L	50	50.5	101	85-115	
Nickel	ug/L	50	50.4	101	85-115	
Selenium	ug/L	50	52.2	104	85-115	
Silver	ug/L	5	4.9	99	85-115	
Thallium	ug/L	50	51.0	102	85-115	
Zinc	ug/L	250	261	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1559228 1559229

Parameter	Units	92295752001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Antimony	ug/L	ND	50	50	49.4	48.8	97	96	70-130	1	
Arsenic	ug/L	ND	50	50	51.4	50.9	100	99	70-130	1	
Cadmium	ug/L	ND	5	5	4.8	4.7	96	94	70-130	3	
Copper	ug/L	ND	50	50	50.2	49.2	100	98	70-130	2	
Lead	ug/L	ND	50	50	51.1	49.9	102	100	70-130	2	
Nickel	ug/L	ND	50	50	49.4	49.3	98	97	70-130	0	
Selenium	ug/L	ND	50	50	50.8	50.6	100	100	70-130	0	
Silver	ug/L	ND	5	5	4.8	4.7	97	95	70-130	2	
Thallium	ug/L	ND	50	50	51.5	50.4	103	101	70-130	2	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: BREMO  
Pace Project No.: 92295753

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1559228 1559229											
Parameter	Units	92295752001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Zinc	ug/L	ND	250	250	254	252	100	99	70-130	1	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: BREMO  
Pace Project No.: 92295753

QC Batch:	WET/44602	Analysis Method:	SM 2540D
QC Batch Method:	SM 2540D	Analysis Description:	2540D Total Suspended Solids
Associated Lab Samples:	92295753001		

METHOD BLANK: 1723435 Matrix: Water  
Associated Lab Samples: 92295753001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	1.0	04/30/16 11:21	

LABORATORY CONTROL SAMPLE: 1723436

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	250	246	98	90-110	

SAMPLE DUPLICATE: 1723437

Parameter	Units	92295752001 Result	Dup Result	RPD	Qualifiers
Total Suspended Solids	mg/L	ND	ND		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: BREMO  
Pace Project No.: 92295753

QC Batch:	WETA/57418	Analysis Method:	EPA 218.6
QC Batch Method:	EPA 218.6	Analysis Description:	Chromium, Hexavalent by IC 28 Day
Associated Lab Samples:	92295753001		

METHOD BLANK: 1559444 Matrix: Water  
Associated Lab Samples: 92295753001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	ND	1.0	05/02/16 17:47	CC

LABORATORY CONTROL SAMPLE: 1559446

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	.075	.085J	114	90-110	CC,L0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1559447 1559448

Parameter	Units	92295752001		MS		MSD		MS		MSD		% Rec Limits	RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chromium, Hexavalent	ug/L	ND	.075	.075	.075	ND	.024J	0	32	90-110		CC,M0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: BREMO  
Pace Project No.: 92295753

QC Batch:	WETA/27426	Analysis Method:	EPA 350.1
QC Batch Method:	EPA 350.1	Analysis Description:	350.1 Ammonia
Associated Lab Samples:	92295753001		

METHOD BLANK: 1723456 Matrix: Water  
Associated Lab Samples: 92295753001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.20	04/30/16 15:08	

LABORATORY CONTROL SAMPLE: 1723457

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1723458 1723459

Parameter	92295752001		MS	MSD	MS		MSD		% Rec	RPD	Qual
	Units	Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits		
Nitrogen, Ammonia	mg/L	ND	5	5	5.0	5.0	101	101	90-110	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALITY CONTROL DATA

Project: BREMO  
Pace Project No.: 92295753

QC Batch:	WETA/27425	Analysis Method:	SM 4500-Cl-E
QC Batch Method:	SM 4500-Cl-E	Analysis Description:	4500 Chloride
Associated Lab Samples:	92295753001		

METHOD BLANK: 1723452 Matrix: Water  
Associated Lab Samples: 92295753001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	5.0	04/30/16 13:36	

LABORATORY CONTROL SAMPLE: 1723453

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	21.4	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1723454 1723455

Parameter	92295752001		MS	MSD	MS	MSD	MS	MSD	% Rec	RPD	Qual
	Units	Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits		
Chloride	mg/L	56.4	10	10	66.6	66.6	102	102	90-110	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

## QUALIFIERS

Project: BREMO  
Pace Project No.: 92295753

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville  
PASI-C Pace Analytical Services - Charlotte  
PASI-O Pace Analytical Services - Ormond Beach

### ANALYTE QUALIFIERS

CC The continuing calibration for this compound is outside of method control limits. The result is estimated.  
L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.  
L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.  
M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..




## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BREMO  
Pace Project No.: 92295753

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92295753001	T1-160429-1023-S3		FLD/		
92295753001	T1-160429-1023-S3	EPA 1664B	GCSV/24851		
92295753001	T1-160429-1023-S3	EPA 200.7	MPRP/30163	EPA 200.7	ICP/18022
92295753001	T1-160429-1023-S3	Trivalent Chromium Calculation	ICP/18026		
92295753001	T1-160429-1023-S3	EPA 200.8	MPRP/30164	EPA 200.8	ICPM/12207
92295753001	T1-160429-1023-S3	EPA 245.1	MERP/9340	EPA 245.1	MERC/8969
92295753001	T1-160429-1023-S3	SM 2540D	WET/44602		
92295753001	T1-160429-1023-S3	EPA 218.6	WETA/57418		
92295753001	T1-160429-1023-S3	EPA 350.1	WETA/27426		
92295753001	T1-160429-1023-S3	SM 4500-CI-E	WETA/27425		

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc..

	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: 26FEB2016 Page 1 of 2
	Document No.: F-MEC-CS-009-rev.02	Issuing Authority: Pace Mechanicsville Quality Office

Page 2 of 2 for Internal Use ONLY



Client Name:

Golder / Bremono

Project #

WO# : **92295753**



Courier:

☐ Commercial

☐ Fed Ex

☐ UPS

☐ USPS

☐ Client

☒ Pace

☐ Other: \_\_\_\_\_

Custody Seal Present?

☐ Yes

☒ No

Seals Intact?

☐ Yes

☐ No

Packing Material:

☐ Bubble Wrap

☐ Bubble Bags

☒ None

☐ Other: \_\_\_\_\_

Thermometer:

☒ RMD001

☐ \_\_\_\_\_

Type of Ice:

☒ Wet

☐ Blue

☐ None

☒ Samples on ice, cooling process has begun

Correction Factor: 0.0°C

Cooler Temp Corrected (°C):

2.9

Date/Initials Person Examining Contents: 4-29-16

RSB

Temp should be above freezing to 6°C

USDA Regulated Soil ( ☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

			COMMENTS:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	<u>1 day TAT</u>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	Note if sediment is visible in the dissolved container
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>			
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)			
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC,LLHg	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Samples checked for dechlorination	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

Project Manager SCURF Review: NMG

Date: 4/29/16

Project Manager SRF Review: NMG

Date: 4/30/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

Section A

Required Client Information

Company: Pace Analytical  
Address: 300 W. 1st Avenue, Suite 200  
City: Portland, ME 04101  
State: ME  
Zip: 04101  
Phone: 207.551.2221  
Fax: 207.551.2221  
Requested Due Date/TAT: 7/1/07

Section B

Required Project Information

Report To: Donna D. Gagnier  
Copy To: Donna D. Gagnier  
Purchase Order No: 15-2007-1.003  
Project Name: 15-2007-1.003  
Project Number: 15-2007-1.003

Section C

Invoice Information

Attention: Donna D. Gagnier  
Company Name: Pace Analytical  
Address: 300 W. 1st Avenue, Suite 200  
City: Portland, ME 04101  
State: ME  
Zip: 04101  
Reference: 15-2007-1.003  
Project Profile: 15-2007-1.003

Page: 1 of 1

REGULATORY AGENCY

NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐  
UST ☐ RCRA ☐ OTHER ☐  
Site Location: ME  
STATE: ME

Requested Analysis Filtered (Y/N)

Section D Required Client Information		Matrix Codes MATRIX / CODE		COLLECTED				PRESERVATIVES		ANALYSIS TEST		Residual Chlorine (Y/N)							
SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE		MATRIX CODE (see valid codes to left)		COMPOSITE START		COMPOSITE END/GRAB		Y/N											
Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Tissue Other		DW WT WW P SL OL WP AR TS OT																	
ITEM #		MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION		# OF CONTAINERS		Unpreserved							
1	T1-160421-1023-S3	43	G			7/29/06	1023					H <sub>2</sub> SO <sub>4</sub>							
2												HNO <sub>3</sub>							
3												HCl							
4												NaOH							
5												Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>							
6												Methanol							
7												Other							
8																			
9																			
10																			
11																			
12																			
ADDITIONAL COMMENTS				RELINQUISHED BY / AFFILIATION				DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS	
								7/29/06		1353		[Signature]		4/29		13:5729		Y N Y	

ADDITIONAL COMMENTS: RELINQUISHED BY / AFFILIATION DATE TIME ACCEPTED BY / AFFILIATION DATE TIME SAMPLE CONDITIONS

Temp in °C: 13.5  
Received on Ice (Y/N): Y  
Custody Sealed Cooler (Y/N): N  
Samples Intact (Y/N): Y